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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/602,614	06/25/2003	Yukihiro Nakano	239459US0	2488

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EXAMINER

SHOSHO, CALLIE E

ART UNIT PAPER NUMBER

1714

DATE MAILED: 09/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/602,614

Applicant(s)

NAKANO ET AL.

Examiner

Callie E. Shosho

Art Unit

1714

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05 July 2006.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-5, 7, 9, 11, 12 and 14-18 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☒ Claim(s) 7, 9, 11, 12, 16 and 17 is/are allowed.  
6) ☒ Claim(s) 1-5 and 18 is/are rejected.  
7) ☒ Claim(s) 14 and 15 is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 6/21/06 & 7/5/06.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application  
6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

1. All outstanding rejections except for those described below are overcome by applicants' amendment filed 7/5/06.

The new grounds of rejection set forth below are necessitated by applicants' amendment and thus, the following action is final.

**Claim Rejections - 35 USC § 112**

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 4 and 18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

(a) Claim 4, which depends on claim 1, recites that the "colorant is at least one of a pigment and a dye" while claim 1 has been amended to recite "colorant comprising a pigment". Thus, the scope of claim 4 is confusing given that it is not clear how the colorant is a dye given that claim 1 now requires that the colorant comprises a pigment. Clarification is requested.

(b) Newly added claim 18 recites "process for preparing the water-based ink of any one of claims 1-5, 7, 9, 11, 12, or 14-17 comprising dissolving a water-insoluble polymer having an ionic group at its end or at least two hydroxyl groups at its end in an organic solvent....". When claim 18 is drawn, for instance, to process for preparing the water-based ink of claim 1, the scope of the claim is confusing given that it is not clear how the ink of claim 1 which requires water-

insoluble polymer having at least two hydroxyl groups at its end can be prepared using water-insoluble polymer having an ionic group at its end or water-insoluble polymer having at least two hydroxyl groups at its end. That is, it is not clear how the ink of claim 1 would be prepared using water-insoluble polymer having an ionic group at its end when the ink requires water-insoluble polymer having at least two hydroxyl groups at its end. Similarly, the scope of the claim is confusing when claim 18 is drawn, for instance, to process for preparing the water-based ink of claim 7 given that it is not clear how the ink of claim 7 would be prepared using water-insoluble polymer having at least two hydroxyl groups at its end when the ink requires water-insoluble polymer having an ionic group at its end.

In order to avoid confusion in the scope of claim 18, it is suggested that separate process claims are set forth for each independent claim 1, 7, and 16 (including those dependent claims that depend on each independent claim). For instance, it is suggested that claim 18 is rewritten as “A process for preparing the water-based ink of any one of claims 1-5, 14, or 15 comprising dissolving the water-insoluble polymer having at least two hydroxyl groups at its end in an organic solvent...”.

**Claim Rejections - 35 USC § 102**

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 1-5 are rejected under 35 U.S.C. 102(e) as being anticipated by Akers, Jr. et al. (U.S. 6,652,634).

The rejection is adequately set forth in paragraph 3 of the office action mailed 4/4/06 and is incorporated here by reference.

### **Response to Arguments**

6. Applicants' arguments filed 7/5/06 have been fully considered but they are not persuasive.

Specifically, applicants argue that Akers, Jr. et al. is not a relevant reference against the present claims given that there is no disclosure in Akers, Jr. et al. of water-insoluble polymer as presently claimed. Applicants argue that the polymer of Akers, Jr. et al. is utilized in the form of a solution and thus, is clearly water-soluble.

However, while the polymer of Akers, Jr. et al. is obtained from hydrophilic segments in addition to hydrophobic segments, due to the presence of the hydrophobic segments, it is clear that the polymer of Akers, Jr. et al. is at least partially water-insoluble. Further, it is noted that the water-insoluble polymer of the present invention is obtained from water-soluble monomers such as salt-forming monomer and hydroxyl-containing monomer and contains such monomers in amount as high as 90% (page 17, lines 2-17 and page 20, lines 3-4 and 9-10).

Additionally, while it is agreed that the polymer of Akers, Jr. et al. is utilized in the form of a solution, it is significant to note, as set forth in the examples of the present specification (page 27, line 23), that the water-insoluble polymer of the present invention is also utilized in the form of a solution.

In light of the above, it is the examiner's position that the polymer of Akers, Jr. et al. meets the requirements of water-insoluble polymer as required in the present claims.

**Allowable Subject Matter**

7. Claims 7, 9, 11-12, and 16-17 are allowable over the “closest” prior art Miyabayashi ‘302 (U.S. 6,864,302) or Miyabayashi ‘333 (U.S. 6,602,333) given that while each of Miyabayashi ‘302 or Miyabayashi ‘333 discloses ink jet ink comprising pigment encapsulated by water-insoluble polymer obtained using initiator that would produce polymer having ionic group at its end, there is no disclosure in either Miyabayashi ‘302 or Miyabayashi ‘333 of polymer having ionic group at its end wherein the ionic group is derived from at least one member selected from the group consisting of chain transfer agent having ionic group and an iniferter having an ionic group as required in present claim 7. Further, there is no disclosure in Miyabayashi ‘302 or Miyabayashi ‘333 that the polymer is obtained by copolymerizing a monomer mixture comprising (A) salt-forming group-containing monomer, (B) a macromer, and (C) monomer copolymerizable with (A) and (B) as required in present claim 16.

8. Claims 14-15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 14-15 would be allowable if rewritten in independent form as described above given that there is no disclosure in Akers, Jr. et al. (U.S. 6,652,634) of water-insoluble polymer obtained by copolymerizing a monomer mixture comprising (A) salt-forming group-containing monomer, (B) a macromer, and (C) monomer copolymerizable with (A) and (B) as required in present claim 14-15.

**Conclusion**

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

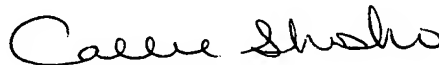
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Callie E. Shosho whose telephone number is 571-272-1123. The examiner can normally be reached on Monday-Friday (6:30-4:00) Alternate Fridays Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1714

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Callie E. Shosho  
Primary Examiner  
Art Unit 1714

CS

9/15/06